Analysis of Options for Medicaid to Implement DRG-Based Inpatient Payment Method

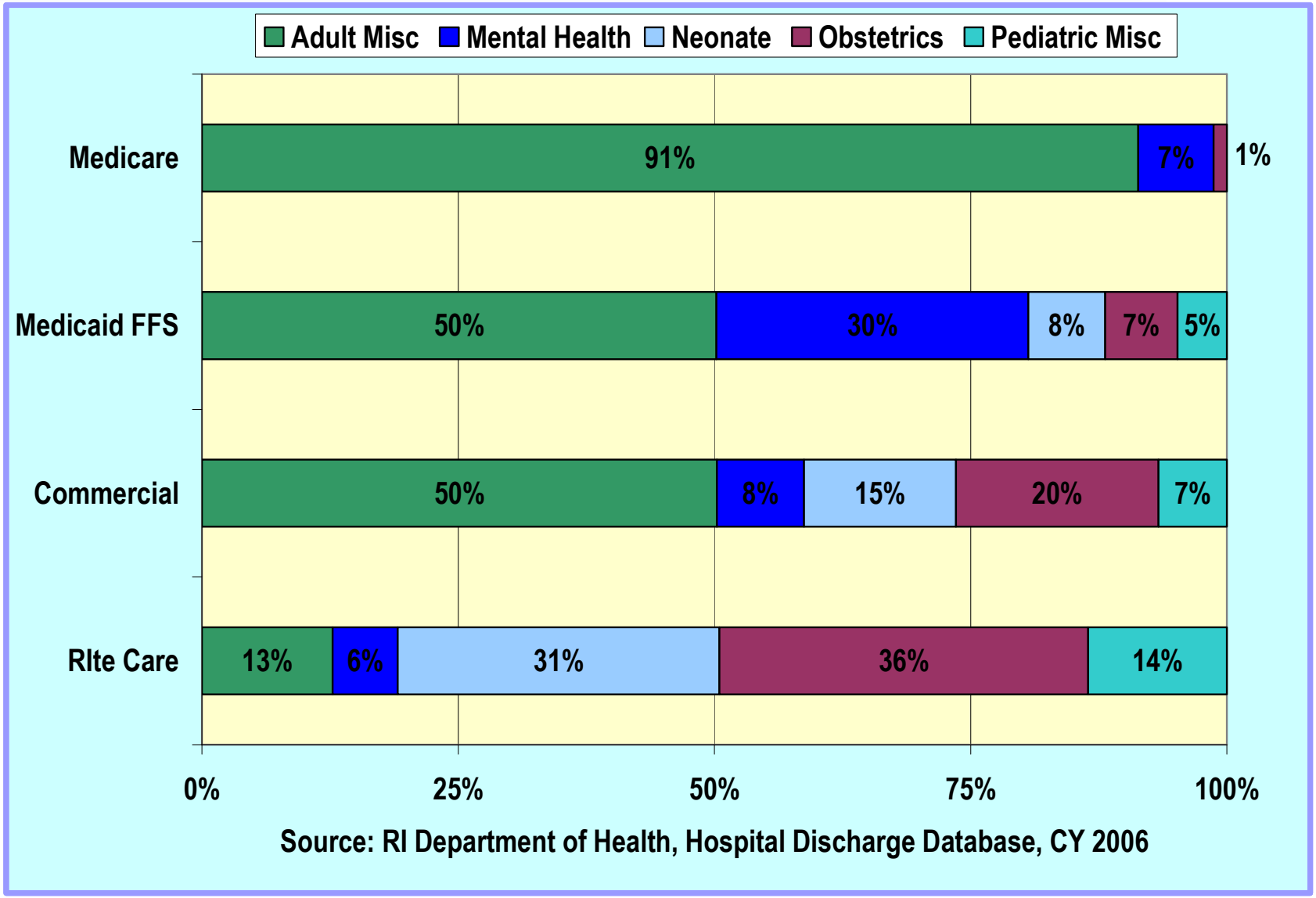
Discussion with the Rhode Island Community Hospital Task Force

December 19, 2007

Proposed Approach

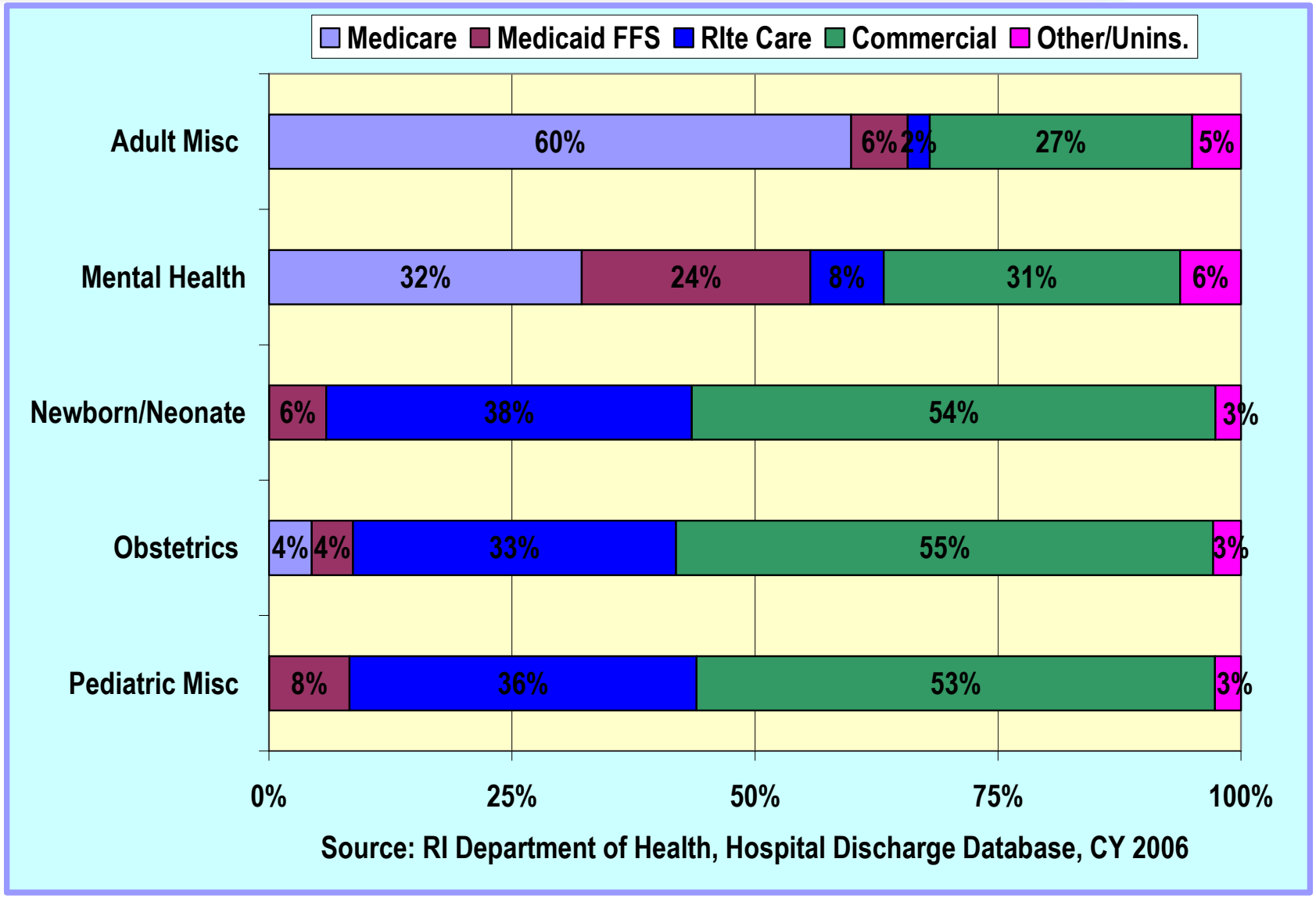
- Overview of RI market roles and market shares
  - CY 2006 data from RI Department of Health
  - Percentages of total stays, including newborns
- Description of three options
  - MS-DRGs with RI customization
  - All Payer Severity Adjusted DRGs (APS-DRGs)
  - All Patient Refined DRGs (APR-DRGs)
- Discussion of alternatives in comparison with Task Force principles

The Business of Each Payer



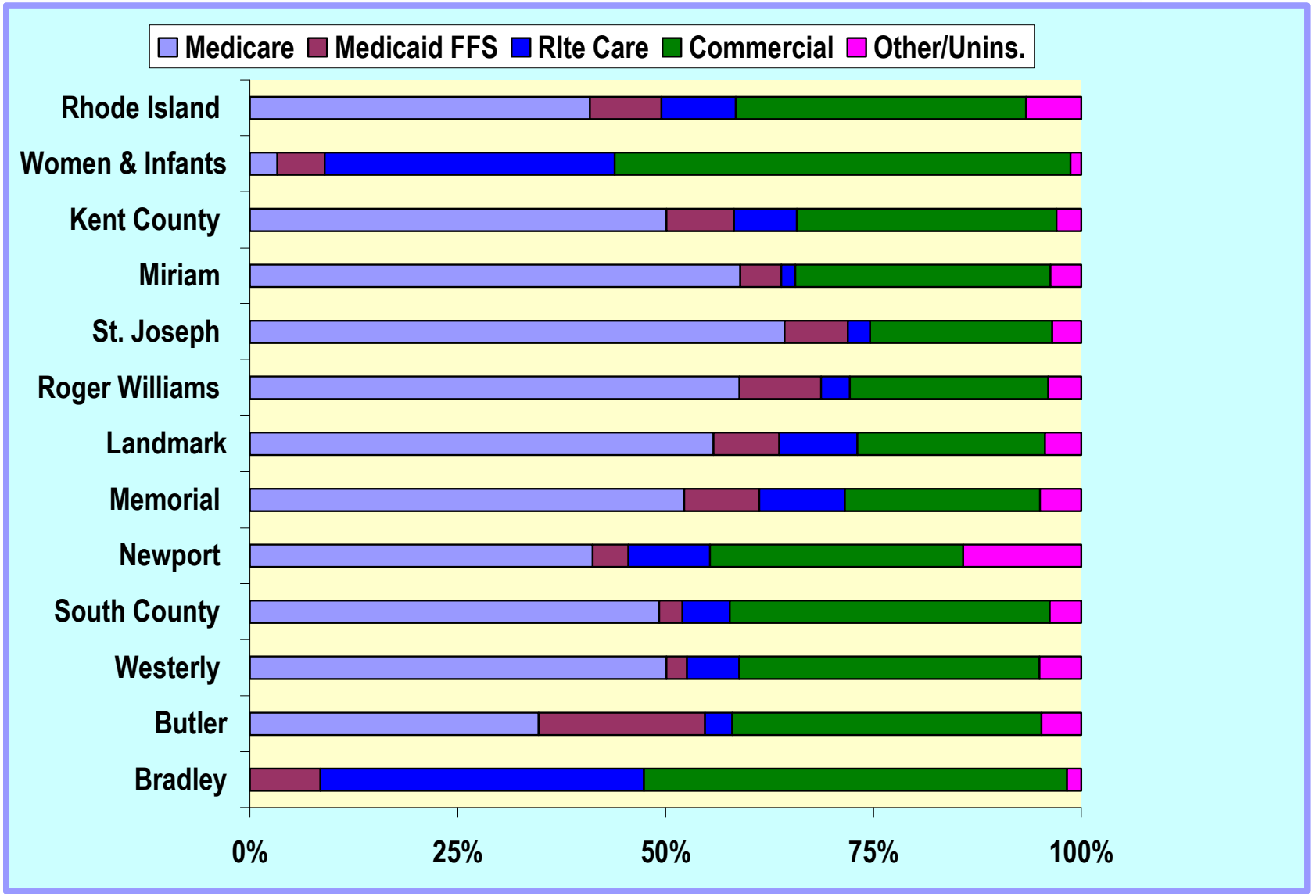
Source: RI Department of Health, Hospital Discharge Database, CY 2006

Market Shares for Each Care Category



Source: RI Department of Health, Hospital Discharge Database, CY 2006

Payer Mix for Each Hospital



Implications for the Task Force

1. Accuracy of grouper will vary by service and therefore by payer
2. The task force is picking a grouper for Medicaid with an eye toward feasibility for implementation by commercial payers
3. Different task force members will attach different priorities to feasibility for implementation by commercial payers, depending on the weight they assign to "acceptability/transferability"

For CHTF: Apparent Leading Options

- Medicare Severity DRGs with RI customization
- All Payer Severity Adjusted DRGs
- All Patient Refined DRGs

MS-DRGs with Customization by RI

- Start with MS-DRGs in public domain
  - 745 DRGs including 7 neonate DRGs
  - Complication/comorbidity list and major CC list
  - 1-3 levels of severity per base DRG
  - Medicare casemix values (relative weights)
- Evaluate for use in Rhode Island
  - Would need carveouts or grouper changes for neonates, pediatrics, obstetrics, possibly others
  - Develop relative weights from RI data
  - Fill in with weights for rare DRGs
- Periodic review and update of groups and weights

GROUPER OPTIONS

All Payer Severity Adjusted DRGs (APS)

- Proprietary to Ingenix (unit of United Healthcare)
- 1,129 DRGs including 21 neonate DRGs
- Developed in mid-1990s
- Major modification being released 1/1/08
- MS-DRGs with 4 modifications for all-patient pop.
  - Uniform 3 severity levels for all non-neonate DRGs
  - Evaluate and implement pediatric splits
  - Use separate neonate DRGs based on birthweight with 1-4 severity levels
  - Recalibrate weights using all-patient database

All Patient Refined DRGs (APR-DRGs)

- Proprietary to 3M Health Information Systems
- 1,256 DRGs including 112 neonatal DRGs
- Developed in early 1990s by 3M and National Association of Children's Hospitals (NACHRI)
- Four severity levels for each base DRG
- No standard CC lists: Severity captured by interaction of CCs for specific conditions
- Age can affect severity for specific conditions

Fairness

FAIRNESS: Similar payment for similar care

Current method	• Payments depend on hospital-specific costs and charges – substantial variation in payment among hospitals for similar cases • Any inequities in baseline cost level are rolled forward with statewide application of Maxicap
MS-DRGs customized	Statewide rates for each DRG – how well "similarity" is captured for some care categories will depend on RI customizations
APS-DRGs	Statewide rates for each DRG – capture of "similarity" is expected to be good but has not been evaluated
APR-DRGs	Statewide rates for each DRG – very good capture of "similarity"

Quality / Value Based Purchasing

QUALITY AND VALUE-BASED PURCHASING: Rewards the provision of good quality care

Current method	No relationship between payment and quality
MS-DRGs customized	Good casemix adjustment can be a prerequisite for comparing hospital performance – casemix adjustment depends on RI customization
APS-DRGs	Good casemix adjustment can be a prerequisite for comparing hospital performance – casemix adjustment expected to be good but has not been evaluated
APR-DRGs	• Good casemix adjustment can be a prerequisite for comparing hospital performance – casemix adjustment very good • Only grouper suitable for risk-adjusted measurement of mortality and potentially preventable readmissions and complications

Efficiency

EFFICIENCY: Rewards the efficient use of resources both within institutions and across the hospital system as a whole

Current method	• In principle, hospitals that reduce cost are penalized with lower future payment • In practice, standard statewide Maxicap increases create weak incentives to reduce cost per day • Hospitals rewarded in short term for increasing charges
MS-DRGs customized	Flat rates create sharp incentives to minimize length of stay and cost per day
APS-DRGs	Flat rates create sharp incentives to minimize length of stay and cost per day
APR-DRGs	Flat rates create sharp incentives to minimize length of stay and cost per day

Acceptability / Transferability

ACCEPTABILITY / TRANSFERABILITY to other payers: Reflects approaches that are accepted, used in one or more states, and applicable across payers so as to make consistency across payers possible.

Current method	• RI one of only six states still using cost reimbursement • Other payers generally unwilling to pay based on cost
MS-DRGs customized	• MS-DRGs now the Medicare standard and will have growing use • RI customizations could be difficult to defend • Other payers may or may not agree with customizations
APS-DRGs	• Similarity to MS-DRGs may promote acceptability • Significant changes in new version not yet evaluated • Used for analysis by hospitals and AHRQ • Not currently used for payment
APR-DRGs	• Different structure than MS-DRGs may generate resistance • Widely used for analysis by 1,600 hospitals, AHRQ, MedPAC, state and private-sector report cards, researchers • Used for payment by MD, MA; being implemented by MS, MT, PA, Wellmark

Acceptability/Transferability (Cont'd)

*Likely <u>future</u> state of inpatient payment in RI depending on Medicaid's choice of DRG grouping option**			
Medicaid Choice of Options	**Medicare: MS-DRGs**	**United: MS-DRGs Customized for United**	**BCBSRI: DRG-Based System TBD**
Current method	• Two vastly different methods of payment within the state remain; three if per-diem method still used by commercial payers (see note below) • United and Medicare most similar		
MS-DRGs customized	• Medicaid, Medicare and United quite similar in grouper • Medicaid and United probably have different customizations • Differences for neonatal, pediatric, obstetric and possibly other populations.		
APS-DRGs	• Medicaid, Medicare and United quite similar; even more similar if United eventually adopts APS-DRGs. • Differences for neonatal, pediatric, obstetric and possibly other populations.		
APR-DRGs	• DRG-based methods of payment with two basic groupers: ○ United and Medicare most similar ○ BCBSRI could eventually move to Medicaid grouper • United and Medicare closest together, especially for "Medicare-type" patients.		

** Assumes no statutory requirements*

Note: United and BCBSRI currently use per-diem with some hospitals in Rhode Island

Resource-Based

RESOURCE-BASED: Results in payment calibrated to the expected use of resources and varying with acuity

Current method	• Interim payment at a percent of charges means hospitals receive more payment when higher acuity means higher charges • Cost-based payment within corridor means hospitals may or may not end up with higher payment for higher-acuity patients
MS-DRGs customized	• Adult medical: severity splits expected to mean good performance • Mental health: MS-DRGs expected to perform reasonably well • Pediatric, neonatal and obstetric patients: performance will depend on how well RI customizations are done
APS-DRGs	• Adult medical: expected performance better than MS-DRGs • Mental health: expected performance better than MS-DRGs • Pediatric, neonatal and obstetric patients: performance expected to be good but has not been evaluated
APR-DRGs	• Adult medical: very good performance • Mental health: reasonably good performance • Pediatric, neonatal and obstetric patients: very good performance

Simplicity

SIMPLICITY: Minimizes complexity and administrative burden to hospitals and payers

Current method	• Payments not finalized until well after discharge—gap of several years historically • Concerns about Medicare audits of Medicaid cost report data
MS-DRGs customized	• Payer burden of developing and maintaining defensible RI customizations to MS-DRGs • Hospitals familiar with MS-DRGs but would have to learn about RI customizations
APS-DRGs	• Similar "look and feel" to MS-DRGs but hospitals would have to learn and possibly buy software to understand full system
APR-DRGs	• Dissimilar to MS-DRGs but already in wide use

Note: Under any DRG option, hospitals likely would buy proprietary software even if the basic DRG algorithm is in the public domain.

Outlier Recognition

OUTLIER RECOGNITION: Accommodates the infrequent but significant variation in resources required to care for patients with similar diagnoses

Current method	• Interim payment at a percent of charges means hospitals receive more payment when higher acuity means higher charges • Cost-based payment within corridor means hospitals may or may not end up with higher payment for higher-acuity patients
MS-DRGs customized	• Capability of grouper to capture range of resource use will depend on RI customizations • Cost or day outlier payment feature can be added
APS-DRGs	• Capability of grouper to capture range of resource use expected to be good but has not been evaluated • Cost or day outlier payment feature can be added
APR-DRGs	• Very good capability of grouper to capture range of resource use • Cost or day outlier payment feature can be added

Comprehensivness

COMPREHENSIVENESS: Includes all inpatient services except long-term and skilled nursing facility care

Current method	Cost-based payment equally applicable across inpatient services
MS-DRGs customized	• Applicability to neonatal, pediatric and some other services would depend on RI customizations • Applicability to mental health and rehab merits further analysis
APS-DRGs	Applicability to mental health and rehab merits further analysis
APR-DRGs	Applicability to mental health and rehab merits further analyis

Summary

	Medicare Severity (MS) with RI Customization	All Payer Severity Adjusted (APS)	All Patient Refined (APR)
Fairness			
Quality / Value-Based			
Efficiency			
Acceptability/Transferability			
Resource-Based			
Simplicity			
Outlier Recognition			
Comprehensiveness			
Major Benefit for RI			
Major Concern for RI			

APPENDIX

Mechanics of DRG Calculations

DRG Base Price set by payer to hit overall budget target

DRG assigned based on clinical data

Casemix value from national dataset

DRG	DRG Base Price	Casemix Value	Policy Adj	Relative Wt for Payment	DRG Base Payment
001 HEART FAILURE LEVEL 1	$ 4,000	0.95	1.00	0.95	**$ 3,800**
002 HEART FAILURE LEVEL 2	$ 4,000	1.25	1.00	1.25	**$ 5,000**
003 DEPRESSION LEVEL 1	$ 4,000	0.75	1.25	0.94	**$ 3,750**
004 DEPRESSION LEVEL 2	$ 4,000	1.30	1.25	1.63	**$ 6,500**

Policy adjustor set by payer

Relative weight for payment = Casemix Value x Policy Adj

DRG Base Payment = Rel Weight x DRG Base Price

DRG Base Payment + DRG Outlier Payment = DRG Payment

DRG Payment + Add-Ons = Total Payment (aka Allowed Amount)

APPENDIX

R^2 as Measure of Grouper Performance

Before Grouping

Assume we have four cases for which birthweight and charges are known. Our goal is to group these cases in a way that makes sense both clinically and in terms of typical resource use. If we put all cases in one group, it's obvious that they are quite dissimilar. This can be measured by the variance in charges. Variance equals the sum of the squared differences for each case's charge relative to the overall average charge.

Case	Birthweight	Charges	Difference from Overall Average	Difference Squared
Overall average charge = $20,750				
1	> 2499g	$ 3,000	$ (17,750)	$ 315,062,500
2	> 2499g	$ 10,000	$ (10,750)	$ 115,562,500
3	1000-1499g	$ 25,000	$ 4,250	$ 18,062,500
4	1000-1499g	$ 45,000	$ 24,250	$ 588,062,500
			Variance =	**$ 1,036,750,000**

After Grouping

Since birthweight seems to be correlated with hospital charges, we split the four cases into two groups based on birthweight. The variance equals the sum of the squared differences for each case's charge relative to the average charge for its DRG.

Case	Birthweight	Charges	Difference from DRG Average	Difference Squared
DRG 1 (Average charge = $6,500				
1	> 2499g	$ 3,000	$ (3,500)	$ 12,250,000
2	> 2499g	$ 10,000	$ 3,500	$ 12,250,000
DRG 2 (Average charge = $35,000)				
3	1000-1499g	$ 25,000	$ (10,000)	$ 100,000,000
4	1000-1499g	$ 45,000	$ 10,000	$ 100,000,000
			Variance =	**$ 224,500,000**

Reduction in variance, or R^2, is calculated as the reduction in variance due to grouping by DRG relative to the overall variance before grouping.

$$R2 = \frac{\$1,036,750,000 - \$\ 224,500,000}{\$1,0346,750,000} = \mathbf{0.78}$$

For More Information

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